

Immunization Recommendations

- ❖ Annual influenza vaccine is recommended for all patients with diabetes ≥ 6 months of age.
- ❖ Pneumococcal vaccine is recommended for all patients with diabetes. Revaccination is recommended for individuals > 64 years previously immunized before age 65 if the vaccine was administered more than 5 years ago.
- ❖ Other indications for repeat vaccination include nephrotic syndrome, chronic renal disease, and other immunocompromised states, as following transplantation.
- ❖ In 2006, 70.3 percent of BRFSS respondents with diabetes reported receiving a flu shot in the previous 12 months.
- ❖ Also in 2006, 60.4 percent of BRFSS responders with diabetes report they had previously received a pneumococcal immunization.
- ❖ *Healthy People 2010 Objective 14-29's* goal is for 60 percent of adults with diabetes to receive an influenza vaccination yearly, and for 60 percent of adults with diabetes to receive a pneumococcal vaccination.

Why are immunizations important for people with diabetes?

People with diabetes mellitus are six times more likely to be hospitalized during an influenza outbreak than those without diabetes. Pneumococcal infections cause 40,000 deaths annually in the United States; the highest mortality occurs among the elderly and patients with underlying medical conditions including diabetes. Many influenza and invasive pneumococcal infections are vaccine preventable.

What are the recommendations for receiving the influenza vaccine?

Annual vaccination is recommended in all patients with either type 1 or 2 diabetes. Split virus and whole virus vaccine preparations are available. The manufacturer's package insert should be reviewed for current year dose recommendations. The optimal time for vaccination is late October through mid December, but vaccination at any time during the winter offers benefit. Overseas travel plans may necessitate adjusting the vaccination schedule. Women with diabetes who will be in at least the 14th week of gestation during influenza season (December to March in the U.S.) should receive an influenza vaccine.

Contraindications

Known anaphylactic hypersensitivity to eggs or to other components of the influenza vaccine contraindicates vaccination, unless there is a high risk of complications from influenza infection and appropriate allergy evaluation and desensitization has occurred. Moderate to severe acute illness is also a contraindication until symptoms have abated. Mild illness with or without fever is not a contraindication. Vaccine manufacturer's package insert should be reviewed for product specific cautions and contraindications.

Concomitant administration of other vaccines

Influenza vaccine may be administered at the same time, at a different site, or with other vaccines without increasing side effects or reducing efficacy. Specifically, influenza vaccine may be given at the same time as pneumococcal vaccine.

Who can use the nasal-spray flu vaccine LAIV (FluMist®)?

LAIV (FluMist®) is approved for use in healthy* people 2 to 49 years of age who are not pregnant. Breastfeeding is not a contraindication for FluMist®. The nasal-spray flu vaccine LAIV (FluMist®) can be given to people with minor illnesses (e.g., diarrhea or mild upper respiratory tract infection with or without fever). However, if nasal congestion is present that might limit delivery of the vaccine to the nasal lining, then delaying of vaccination until the nasal congestion is reduced should be considered. FluMist® is contraindicated in people less than age 2 or 50 years of age or older, those with medical conditions at high risk for complications from influenza, including those with chronic heart or lung disease (asthma or reactive lung disease), diabetes, kidney failure, weakened immune systems, or those who take medications that can weaken the immune system, in children < 5 years of age with a history of recurrent wheezing, children or adolescents receiving aspirin therapy, history of Guillain-Barre syndrome, and people who have severe allergy to chicken eggs or nasal spray vaccine components. Please see www.cdc.gov/mmwr/preview/mmwrhtml/rr5306a1.htm for a list of contraindications for FluMist®.

**On September 19, 2007, the U.S. Food and Drug Administration (FDA) approved use of the nasal influenza vaccine LAIV (FluMist®) for healthy children ages 2-4 years old (24 to 59 months old) without a history of recurrent wheezing, as well as for healthy persons ages 5 to 49 years who are not pregnant. Previously, approval was for healthy persons ages 5 to 49 years who were not pregnant.*

Pneumococcal Vaccine

Pneumococcal vaccine is recommended in all patients with type 1 or type 2 diabetes at the time of diagnosis. The 23 capsular polysaccharide antigens in the current vaccine represent the pneumococcal serotypes causing 85 to 90 percent of invasive disease and the 6 serotypes most frequently causing invasive drug-resistant infection. Consult the manufacturer's package insert for dosage instructions

Contraindications to pneumococcal vaccination

There is no contraindication to a first dose of pneumococcal vaccine other than moderate or severe acute illness. Vaccine manufacturer's package insert should be reviewed for product specific cautions and contraindications.

The safety of 23 valent polysaccharide vaccine for pregnant women has not been studied. It should generally not be given to healthy pregnant women. Women who are at high risk of pneumococcal disease and who are candidates for pneumococcal vaccine should be vaccinated before pregnancy.

Revaccination

Routine revaccination of young, immuno-competent adults is not presently recommended. A single revaccination five or more years after the initial vaccination should be considered in:

1. The elderly, and
2. For those people with co-morbid conditions that put them at very high risk for invasive infection including asplenia, transplant, immunosuppression, nephrotic syndrome, and chronic renal failure.

Pediatric Patients

Influenza vaccination

Infants with diabetes should not be immunized for influenza until they are > 6 months old. The manufacturer's package insert should be reviewed for current year dose recommendations. See the section on FluMist® on the previous page for indications for pediatric patients.

Pneumococcal vaccination

The pneumococcal conjugate vaccine, PCV7 or Prevnar®, licensed in late 2000, is the first pneumococcal vaccine that can be used in children under the age of two years. However, pneumococcal vaccines for the prevention of disease among children and adults who are two years and older have been in use since 1977. Pneumovax® and Pnu-Immune® are 23 valent polysaccharide vaccines (PPV23) that are currently recommended for use in all adults who are older than 65 years of age and for persons who are 2 years and older and at high risk for disease (e.g., sickle cell disease, HIV infection, or other immunocompromising condition). (CDC, 2007)

All children with diabetes should receive a pneumococcal vaccine. Children who are < 24 months at the time of diagnosis should complete the initial series of the 7 valent conjugated pneumococcal vaccine if the series has not been completed. Children older than 24 months are potential candidates for both the 7 valent conjugated vaccine and the 23 valent polysaccharide vaccine. However, there is controversy over the sequencing and dosage for the two vaccines in this age group. Thus, it is advised that a physician with expertise in pediatric infectious disease be consulted about the best course of action. The overarching principle is that all children with diabetes should receive some form of pneumococcal vaccine.

References:

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4. American Diabetes Association. (2007). Standards of medical care in diabetes. *Diabetes Care*, 30(Supplement 1), S4-S41.
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6. Centers for Disease Control (2007, October 26). The nasal-spray flu vaccine (Live attenuated influenza vaccine [LAIV]). Available at cdcinfo@cdc.gov.
7. U. S. Department of Health and Human Services. (2001, February). *Healthy People in Healthy Communities*. Washington, DC: U. S. Government Printing Office.
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